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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,566	11/26/2003	Carl E. Fabian	0018-14	9944

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EXAMINER

GILBERT, SAMUEL G

ART UNIT	PAPER NUMBER
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3735

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/723,566

Applicant(s)

FABIAN ET AL.

Examiner

Samuel G. Gilbert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 22-25 is/are pending in the application.
- 4a) Of the above claim(s) 10 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-16, 18, 19, 22-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 12-16, 18, 19 and 22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fabian (5,057,095).

Claims 1, 12 and 13 – Fabian teaches a system for detecting surgical implements using a magnetomechanical marker having a resonant frequency. The range of operation of the system is set forth below about 1 gigahertz. The operation range includes three types of resonance, magnetomechanical, electromechanical and electromagnetic. The specific range of operation of the magnetomechanical resonance is not set forth however a variety of specific material is set forth for the marker including $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, column 4 lines 50-59. Further column 5 lines 3-6 indicate the resonant frequency may be preselected. The only guidance set forth regarding the resonant frequency selected is that it is one used by a conventional system, column 8 lines 9 and 10, as pointed out by the applicant. The examiner therefore has looked to the prior art to try to determine what resonant frequency is for a conventional system. VonHoene et al(5,338,373) sets forth a table setting forth the resonant frequency for a magnetomechanical marker formed from $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$. The table sets forth a range

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from 120.21 KHz for a marker of the length of 1.80 cm to 33.28 kHz for a marker of 6.40 cm. It is the examiner's position that the range of resonant frequencies for a marker of $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, as set forth by Fabian is between at least 120.21 kHz and 33.28 kHz. Therefore, Fabian anticipates the ranges of 70 to 300 kHz, 110-250kHz, and 120-200kHz because at least a portion of the range, specifically 120.21kHz, is conventionally known in the arts and therefore set forth by Fabian.

Claim 2 – Fabian teaches a system for detecting surgical implements using a magnetomechanical marker having a resonant frequency. The range of operation of the system is set forth below about 1 gigahertz. The operation range includes three types of resonance, magnetomechanical, electromechanical and electromagnetic. The specific range of operation of the magnetomechanical resonance is not set forth however a variety of specific material is set forth for the marker including $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, column 4 lines 50-59. Further column 5 lines 3-6 indicate the resonant frequency may be preselected. The only guidance set forth regarding the resonant frequency selected is that it is one used by a conventional system, column 8 lines 9 and 10, as pointed out by the applicant. The examiner therefore has looked to the prior art to try to determine what resonant frequency is for a conventional system. VonHoene et al(5,338,373) sets forth a table setting forth the resonant frequency for a magnetomechanical marker formed from $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$. The table sets forth a range from 120.21 KHz for a marker of the length of 1.80 cm to 33.28 kHz for a marker of 6.40 cm. It is the examiner's position that the range of resonant frequencies for a marker of $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, as set forth by Fabian is between at least 120.21 kHz and 33.28 kHz.

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Therefore, Fabian anticipates a range of 70 to 300 kHz because at least a portion of the range is conventionally known in the arts and therefore set forth by Fabian.

Element -15- is an interrogator, element -28- is a detection means, and indicating means are set forth in claim 2.

Claim 3 – “ring down” and dipole field is set forth in column 4 lines 33 and 34.

Claims 4 and 5 – applicant’s attention is invited to column 4 lines 35-67. Element -34- is a magnetorestrictive alloy, element -36- is a bias means, and a housing is provided by elements -38- and -31-.

Claims 14-16, 18 and 19 – the method as claimed is set forth in Fabian, the examiner is taking the detecting antenna to be proximate the operating room.

Claim 22 – element -34- is a magnetomechanical element, the claim includes a device having only one strip, elements -31- and -38- form a housing that is sized to allow free vibration and element -36- is a bias magnet.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 12-16, 18, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fabian (5,057,095) in view of VonHoene et al.(5,338,373).

Claims 1, 12 and 13 – Fabian teaches a system for detecting surgical implements using a magnetomechanical marker having a resonant frequency. The range of operation of the system is set forth below about 1 gigahertz. The operation range includes three types of resonance, magnetomechanical, electromechanical and electromagnetic. The specific range of operation of the magnetomechanical resonance is not set forth however a variety of specific material is set forth for the marker including $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, column 4 lines 50-59. Further, column 5 lines 3-6 indicate the resonant frequency may be preselected. The only guidance set forth regarding the resonant frequency selected is that it is one used by a conventional system, column 8 lines 9 and 10, as pointed out by the applicant. The applicant argues that a conventional system uses a resonant frequency much lower than the claimed range of 70-300 kHz typically 58 kHz. If Fabian only teaches such a marker, having a resonant frequency of about 58 kHz, the marker would be about 3.8 cm in length. VonHoene et al. teaches the concept of modifying the length of the marker to create the desired marker and sets forth the relationship between length of the marker and resonant frequency. It would have been obvious to one of ordinary skill in the art at the time the invention was made to change the length of the marker to any desired length and thereby changing the resonant frequency proportionally as is taught by VonHoene et al. (a resonant frequency of 120.21 kHz is set forth in table 1). A shorter marker has a higher resonant frequency while a longer marker has a lower resonant frequency. The applicant has not shown any unexpected results that may overcome an obviousness rejection. The

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change in size(length) of the markers would increase the universe of available distinct markers as taught by VonHoene et al column 8 lines 65-69.

Claim 2 – Fabian teaches a system for detecting surgical implements using a magnetomechanical marker having a resonant frequency. The range of operation of the system is set forth below about 1 gigahertz. The operation range includes three types of resonance, magnetomechanical, electromechanical and electromagnetic. The specific range of operation of the magnetomechanical resonance is not set forth however a variety of specific material is set forth for the marker including $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$, column 4 lines 50-59. Further column 5 lines 3-6 indicate the resonant frequency may be preselected. The only guidance set forth regarding the resonant frequency selected is that it is one used by a conventional system, column 8 lines 9 and 10, as pointed out by the applicant. The applicant argues that a conventional system uses a resonant frequency much lower than the claimed range of 70-300 kHz typically 58 kHz. If Fabian only teaches such a marker, having a resonant frequency of about 58 kHz, the marker would be about 3.8 cm in length. VonHoene et al. teaches the concept of modifying the length of the marker to create the desired marker and sets forth the relationship between length of the marker and resonant frequency. It would have been obvious to one of ordinary skill in the art at the time the invention was made to change the length of the marker to any desired length and thereby changing the resonant frequency proportionally as is taught by VonHoene et al. A shorter marker has a higher resonant frequency while a longer marker has a lower resonant frequency.

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The applicant has not shown any unexpected results that may overcome an obviousness rejection.

Element -15- is an interrogator, element -28- is a detection means, and indicating means are set forth in claim 2.

Claim 3 – “ring down” and dipole field is set forth in column 4 lines 33 and 34.

Claims 4 and 5 – applicant’s attention is invited to column 4 lines 35-67. Element -34- is a magnetorestrictive alloy, element -36- is a bias means, and a housing is provided by elements -38- and -31-.

Claims 14-16, 18 and 19 – the method as claimed is set forth in Fabian, the examiner is taking the detecting antenna to be proximate the operating room.

Claim 22 – element -34- is a magnetomechanical element, the claim includes a device having only one strip, elements -31- and -38- form a housing that is sized to allow free vibration and element -36- is a bias magnet.

Claims 6, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Fabian(5,057,095) and VonHoene et al.(5,338,373) as applied to claims 1-5 above, and further in view of Herzer(6,359,563). The combination of Fabian and VonHoene et al. teaches a device as claimed but does not teach a device having a plurality of elongated strips as claimed in a cavity in a housing. The combination does not teach the centers of the strips being substantially coincident. Herzer teaches a marker having a plurality of strips of amorphous metal in the same cavity in the same housing wherein the strips of figure 3A have centers substantially coincident. It would

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have been obvious to one of ordinary skill in the art at the time the invention was made to make the marker of the combination of Fabian and VonHoene et al with a plurality of registered strips in a single cavity as taught by Herzer to provide a marker having an advantage of a smaller size as taught by Herzer, column 1 lines 48-54. The applicant's attention is invited to column 2 lines 30-48 of Herzer for registration(coincident centers) of the elements and each element having the same resonant frequency.

Claim 11 – strips of the same size and material have the same resonant frequency.

Claims 8, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Fabian(5,057,095), VonHoene et al.(5,338,373), and Herzer(6,359,563) as applied to claims 6 and 7 above and further in view of Irizarry et al (2002/0005783).

The combination of Fabian, VonHoene et al and Herzer teaches a device as claimed but does not teach a plurality of elongated strips being non-parallel. Irizarry et al teaches a magnetomechanical marker teaching two non-parallel strips to increase the detection rate of the marker, paragraph [0034]. It would have been obvious to one of ordinary skill in the medical arts at the time the invention was made to include the concept of non-parallel strips as taught by Irizarry et al with the marker taught by the combination of Fabian, VonHoene et al and Herzer to provide the benefit of increasing the detection rate of the marker, as taught in paragraph [0034] of Irizarry et al.

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Claims 9 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Fabian(5,057,095), VonHoene et al.(5,338,373), Herzer(6,359,563) and Irizarry et al (2002/0005783) as applied to claim 8 above, and further in view of Tanji et al (6,097,312). The combination of Fabian, VonHoene et al., Herzer and Irizarry et al teaches a device as claimed but does not teach a device having a plurality of elongated strips on a different side of a bias magnet. Tanji et al teaches placing resonators on both sides of the bias magnet to allow the marker to be made smaller. It would have been obvious to one of ordinary skill in the medical arts at the time the invention was made to place the bias magnet as taught by Herzer between the two strips to allow the size of the marker to be reduced as taught by Tanji et al., column 6 lines 55-64.

Response to Arguments

Applicant's arguments filed 11/22/2006 have been fully considered but they are not persuasive.

The non-statutory obviousness-type double patenting rejection over Fabian has been withdrawn because such a rejection is inappropriate when the reference was published more than a year prior to the filing date of the current application.

On page 4 first full paragraph the applicant argues that the citation of VonHoene et al. does not satisfy any of the three situations set forth in MPEP 2131.01. It is the

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examiner's position that the use of VanHoene et al is proper at least to show enabled disclosure under MPEP 2131.01. Further, the evidence is proper and required to rebut previous arguments set forth by the applicant regarding the teaching of the range set forth by Fabian.

In the second full paragraph on page 4 the applicant argues that the evidentiary reference must be known by the filing date of the primary reference. The examiner disagrees. The teachings of a conventional system for enabled disclosure only need to be known before the filing date of the applicant's invention. In the instance of inherency the teaching reference may actually be after the filing date of the applicant's invention. In this case VanHoene et al. is proper prior art against the applicant's invention and therefore may be used to show what was a "conventional system" at the time of the applicant's invention.

In the paragraph bridging pages 4 and 5 the applicant argues that Fabian does not disclosed the claimed range with "sufficient specificity" to constitute anticipation under the statute from MPEP 2131.03...

"When the prior art discloses a range which touches *>or< overlaps the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." What constitutes a "sufficient specificity" is

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fact dependent. If the claims are directed to a narrow range, >and< the reference teaches a broad range, ** depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with "sufficient specificity" to constitute an anticipation of the claims. **>See, e.g., *Atofina v. Great Lakes Chem. Corp.*, 441 F.3d 991, 999, 78 USPQ2d 1417, 1423 (Fed. Cir. 2006) wherein the court held that a reference temperature range of 100-500 degrees C did not describe the claimed range of 330-450 degrees C with sufficient specificity to be anticipatory. Further, while there was a slight overlap between the reference's preferred range (150-350 degrees C) and the claimed range, that overlap was not sufficient for anticipation. "[T]he disclosure of a range is no more a disclosure of the end points of the range than it is each of the intermediate points." *Id.* at 1000, 78 USPQ2d at 1424. Any evidence of unexpected results within the narrow range< may also render the claims unobvious. The question of "sufficient specificity" is similar to that of "clearly envisaging" a species from a generic teaching. See MPEP § 2131.02. A 35 U.S.C. 102 /103 combination rejection is permitted if it is unclear if the reference teaches the range with "sufficient specificity." The examiner must, in this case, provide reasons for anticipation as well as a motivational statement regarding obviousness. *Ex parte Lee*, 31 USPQ2d 1105 (Bd. Pat. App. & Inter. 1993) (expanded Board). For a discussion of the obviousness of ranges see MPEP § 2144.05."

It is the examiner's position that conventional megnetomechanical systems include at least 33.28-120.21kHz as shown by VonHoene et al. The range of 33.28-120.21 kHz sets forth the claimed range with satisfactory specificity. In the alternative if it is

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determined that conventional systems are limited to a frequency range only below 70 kHz the claims have been rejected under an obviousness rejection as set forth above.

It is the examiner's position that the teachings of VonHoene et al is not limited to the examples set forth but includes the entire disclosure set forth. Table 1 sets forth a marker having a length of 1.8 cm and a resonant frequency of 120.21 kHz. Further the description of the table includes the known relationship of frequency and length for resonant markers. It is known that as the length of the marker is shortened the resonant frequency increases for markers of the same material.

In the paragraph bridging pages 5 and 6 the applicant sets forth that the claimed frequency range provides the "surprisingly and unexpectedly permits" the claimed marker to be used with a far wider range of surgical implements. The examiner disagrees because the applicant has shown no evidence of what surgical implements the claimed markers may be used with while current markers could not be used with. Further, the examiner believes that because the relationship between length and frequency is known the markers as claimed by the applicant have not shown any unexpected or surprising results. One of ordinary skill in the medical arts would expect a shorter marker to have a higher frequency, specifically a marker of $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$ having a length of 1.8 cm would have a resonant frequency of 120.21 kHz. The applicant's attention is invited to VonHoene et al. Column 8 lines 53-68.

On page 7 the applicant argues the lack of motivation to combine the teachings of Fabian and VanHoene. The examiner believes that proper motivation is set forth in column 8 lines 65-69 of VanHoene that is to modify the size of the markers to provide

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an increase in the universe of available distinct markers. The intended use of the marker does not impart patentable structural differences to the claims as presented.

Regarding Claims 6, 7, and 11, Fabian, VonHoene and Herzer, on page 8 the applicant argues the "long" dimension of the marker has not been modified and the frequency range has not been disclosed. The frequency range has been addressed above. In response to applicant's argument that the "long" dimension has not been changed, the fact that applicant has recognized another advantage that would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Regarding Claims 8, 23 and 25, the frequency range has been addressed above. The examiner has set forth and will repeat the motivation to combine the teachings of Irrizary with Fabian, VonHoene and Herzer. Irrizary teaches that two non-parallel strips in magnetomechanical markers increase the detection rate of the marker, paragraph [0034].

Regarding claims 9 and 24 and Fabian(5,057,095), VonHoene et al.(5,338,373), Herzer(6,359,563), Irizarry et al (2002/0005783) and Tanji et al (6,097,312) the frequency range has been addressed above. In response to applicant's argument that the "long" dimension has not been changed, the applicant's marker is shorter and the

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prior art references at best permit a marker to be narrowed, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

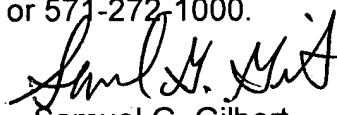
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel G. Gilbert whose telephone number is 571-272-4725. The examiner can normally be reached on Monday-Friday 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor II can be reached on 571-272-4730. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Samuel G. Gilbert
Primary Examiner
Art Unit 3735

sgg